

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0010

NPDES NO. CA0079235

WASTE DISCHARGE REQUIREMENTS  
FOR  
SEWERAGE COMMISSION-OROVILLE REGION  
WASTEWATER TREATMENT PLANT  
BUTTE COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. The Sewerage Commission-Oroville Region (hereafter Discharger) submitted a Report of Waste Discharge, dated 18 November 2003, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) for the Discharger's Wastewater Treatment Plant (No. CA0079235).
2. The Discharger owns and operates a wastewater collection, treatment, and disposal system, and provides sewage service to the City of Oroville, Thermalito Irrigation District, Lake Oroville Area Public Utility District, State of California Parks and Recreation Department, and State of California Department of Water Resources (DWR) as a regional treatment plant. The Discharger's responsibility for the collection system ends at the termination of its east and west interceptors, which consist of approximately 3.25 miles of pipe line and 2 pump stations (Rudy Creek and Feather River). An average dry weather flow of 3.2 million gallons per day (mgd) of treated domestic and industrial wastewater is discharged to the Feather River (Discharge 001), a water of the United States, in Section 33, T19N, R3E, MDB&M at latitude 39° 27' 11" and longitude 121° 38' 13". The treatment plant is in Section 19, T19N, R4E, MDB&M, on property owned by the Discharger (Assessor's Parcel No. 035 390 013), as shown on Attachments A and B, which are a part of this Order.
3. The treatment system consists of screening for removal of large solids, grit removal, primary clarification, activated sludge treatment with secondary clarification, filtration, chlorination, and dechlorination. Sludge is aerobically treated, dried on site, and then disposed at a sanitary landfill. The Report of Waste Discharge and information from the Discharger's monitoring reports describes the discharge as follows:

Design Average Dry Weather Flow:	6.5 mgd
Average Dry Weather Flow:	3.2 mgd
Maximum Daily Wet Weather Flow:	8.9 mgd
Average Temperature:	76°F Summer; 65°F Winter

<u>Constituent</u>	<u>mg/L</u>	<u>lbs/day<sup>b</sup></u>
BOD <sup>a</sup>	3.1	83
Total Suspended Solids	1.2	32

<sup>a</sup> 5-day, 20°C biochemical oxygen demand.

<sup>b</sup> Based on an ADWF of 3.2 mgd.

4. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a major discharge.
5. The Regional Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. This includes plans and policies adopted by the State Water Resources Control Board (SWRCB) and incorporated by reference, such as Resolution No. 68-16, "*Statement of Policy with Respect to Maintaining High Quality of Waters in California*" (Resolution No. 68-16). The Basin Plans, as amended, designate beneficial uses, establish water quality objectives, and contain implementation plans and policies for waters of the Basins. Pursuant to the California Water Code (CWC) Section 13263(a), waste discharge requirements must implement the Basin Plans.
6. The USEPA adopted the *National Toxics Rule* (NTR) on 22 December 1992, which was amended on 4 May 1995, and 9 November 1999, and the *California Toxics Rule* (CTR) on 18 May 2000, which was amended on 13 February 2001. These rules contain water quality criteria applicable to this discharge. The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP) on 2 March 2000, which contains guidance on implementation of the NTR and the CTR.
7. The beneficial uses of the Feather River downstream of the discharge as identified in Table II-1 of the Basin Plan are municipal and domestic, industrial and agricultural supply; water contact and non-contact recreation; esthetic enjoyment; navigation; groundwater recharge, fresh water replenishment; and preservation and enhancement of fish, wildlife, and other aquatic resources.
8. The beneficial uses of the underlying ground water are municipal, domestic, industrial and agricultural supply.
9. Federal regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. The NTR and CTR contain water quality standards applicable to this discharge. The Discharger was issued a letter under the authority of California Water Code Section 13267 on 28 February 2001, requesting effluent and receiving water monitoring meeting the requirements of the State Implementation Policy (SIP). Analytical results were submitted for volatile

substances, semi-volatile substances, pesticides, metals, asbestos, 2,3,7,8-TCDD dioxin, and sixteen other dioxin congeners. The methodology described in Section 1.3 of the State Implementation Policy (SIP) was used to evaluate the Discharger's monitoring data and determine reasonable potential. Copper, zinc, and tetrachloroethene were detected in the effluent at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective.

10. In determining whether a discharge has the reasonable potential to contribute to an in-stream excursion above a narrative or numerical water quality standard, the dilution of the effluent in receiving water may be considered where areas of dilution are defined. The available dilution may also be used to calculate protective effluent limitations by applying water quality criteria at the edge of the defined mixing zone. In situations where receiving water flows are substantially greater than effluent flows and there is available assimilative capacity, dilution may be considered in establishing effluent limitations.
11. The Discharger's consultant conducted a mixing zone study using the CORMIX GI version 4.1 Hydrodynamic Mixing Zone Model to mathematically model effluent discharges from the wastewater treatment plant to the Feather River. The mixing zone modeling results indicated the discharge meets the definition of a completely mixed discharge as contained in the SIP. On the basis of the mixing zone study the Discharger requested a dilution credit of 92 for acute criteria and 121 for chronic criteria.
12. Resolution No. 68-16 requires the Regional Board to maintain high quality waters of the state unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies. The dilution credits requested by the Discharger would result in effluent limits that are extremely high in comparison with measured levels in the Discharger's effluent. Using these dilution credits would grant 100 percent of the assimilative capacity of the river to this discharge, eliminating the ability to allow existing or potential downstream discharges without water quality objectives being exceeded. The Regional Board, therefore, is granting a portion of the requested dilution credit in an effort to maintain the quality of the Feather River at the current levels and reserve a portion of the river's assimilative capacity for other discharges. A dilution credit of 20 for acute and human health criteria and 26 for chronic criteria will result in effluent limits that more reasonably represent current levels in the Discharger's effluent and thus are used to develop effluent limits for copper, zinc and tetrachloroethene in this order.
13. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have a reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Board finds that the discharge has a reasonable potential to cause or

contribute to an in-stream excursion above a water quality standard for the following constituents:

**a. Copper:**

As reported by the Discharger, copper was detected in the effluent at a maximum concentration of 15 ug/L. The initial sampling was not conducted using “clean” techniques, however a subsequent sample was taken with appropriate technique and had a result of 6.8 ug/L. The USEPA CTR aquatic life chronic criterion for copper is 4.3 ug/L (for a minimum receiving water hardness of 40 mg/L and applying the USEPA translator of 0.960). The maximum observed upstream receiving water copper concentration was 0.72 ug/L.

The detected concentration of copper exceeds the CTR criterion. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream exceedance of the CTR criterion. An effluent limitation for copper is included in this Order based on the CTR acute toxicity criterion and is established as 57 ug/L as a monthly average and the daily maximum of 110 ug/L, calculated using the 20:1 dilution credit as shown in the Information Sheet, a part of this Order.

**b. Zinc:**

As reported by the Discharger, zinc was detected in the effluent at a maximum concentration of 60 ug/L. The USEPA CTR aquatic life chronic and acute criteria for zinc is 55.1 ug/L (for a minimum receiving water hardness of 40 mg/L and applying the USEPA translators of 0.986 for chronic and 0.978 for acute). The maximum observed upstream receiving water zinc concentration was 30 ug/L.

The detected concentration of zinc exceeds the CTR criteria. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream exceedance of the CTR criteria. An effluent limitation for zinc is included in this Order based on the CTR acute toxicity criterion and is established as 280 ug/L as a monthly average and the daily maximum of 560 ug/L, calculated using the 20:1 dilution credit as shown in the Information Sheet, a part of this Order.

**c. Tetrachloroethene:**

As reported by the Discharger, tetrachloroethene was detected in the effluent at a maximum concentration of 1.0 ug/L. The USEPA CTR human health criterion for tetrachloroethene is 0.8 ug/L (for waters that are sources of drinking water and which aquatic organisms may be consumed). The maximum observed upstream receiving water tetrachloroethene concentration was 0.32 ug/L.

The detected concentration of tetrachloroethene exceeds the CTR criterion. Therefore, the discharge has a reasonable potential to cause or contribute to an exceedance of the CTR criterion. An effluent limitation for tetrachloroethene is included in this Order based on the CTR human health criterion and is established as 14 ug/L as a monthly average and the daily maximum of 28 ug/L, calculated using the 20:1 dilution credit as shown in the Information Sheet, a part of this Order.

**d. Total Chlorine Residual:**

Chlorine is commonly used as a disinfection agent in the treatment of wastewater. Proper disinfection ensures destruction of pathogens prior to discharge to the surface waters. The Discharger uses chlorine for disinfection of the wastewater at the treatment plant. Because chlorine poses a threat to human health and is especially harmful to organisms living in water, a dechlorination process is necessary for the removal of chlorine. For dechlorination, the Discharger uses sulfur dioxide, which combines with chlorine, to render it relatively unreactive and thus removes it from the waste stream. Inadequate dechlorination may result in the discharge of chlorine to the receiving stream and cause toxicity to aquatic life. The Basin Plan prohibits the discharge of toxic substances in toxic concentrations.

The USEPA has developed Ambient Water Quality Criteria for the protection of freshwater aquatic life. The recommended maximum one-hour average and four-day average concentrations for chlorine are 0.02 mg/L and 0.01 mg/L, respectively. Effluent Limitations for chlorine are included in this Order and are based on the Basin Plan narrative toxicity objective.

**e. Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD):**

Federal regulations, 40 CFR, part 133, provide technology based effluent limitation for BOD and TSS. Pursuant to the regulations at 40 CFR Sections 133.102(a), and (b), the BOD and TSS 30 day average discharge limit for secondary treatment systems shall not exceed 30 mg/L, the 7 day average shall not exceed 45 mg/L, and the 30 day BOD percent removal shall not be less than 85 percent. The previous permit called for monthly average effluent limits for BOD and TSS of 20 mg/L, weekly average limits of 25 mg/L, daily maximum limit of 40 mg/L, and a monthly average removal rate of 85 percent. These limits remain the same in this permit.

**f. Total Coliform Organisms:**

This Order requires a monthly median total coliform limit of 23 MPN/100 ml and a daily maximum limit of 500 MPN/100 ml for effluent discharged to the Feather River. This level is thought to be adequately protective of beneficial uses and is consistent with the previous permit.

**g. pH:**

The Basin Plan provides that the pH of surface waters shall not be depressed below 6.5 nor raised above 8.5 nor shall the discharge alter pH of the receiving water more than 0.5 units. Federal regulations at 40 CFR 133.102(c) describes the minimum level of effluent quality to be attained by secondary treatment facilities for pH to be within 6.0 and 9.0 units. This Order requires the pH of the effluent to be maintained within the limits of 6.0 and 9.0 pH units.

14. Section 13263.6(a), California Water Code, requires that "the regional board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the state board or the regional board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective". The Regional Board has adopted numeric water quality objectives in the Basin Plan for the following constituents: arsenic, copper, silver, zinc, and cyanide. The most recent toxic chemical release data did not indicate that any of these constituents are discharged into the POTW at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective. Data for arsenic, silver and cyanide indicate that there is not a reasonable potential to cause or contribute to an excursion above any numeric water quality objectives referred to in Water Code Section 13263.6(a). This Order contains effluent limitations for copper and zinc.
15. California Water Code Section 13267 states, in part, "(a) A Regional Board, in establishing...waste discharge requirements... may investigate the quality of any waters of the state within its region" and "(b) (1) In conducting an investigation... the Regional Board may require that any person who... discharges... waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Board requires." California Water Code Section 13383 states in part, "a regional board may establish monitoring, inspection, entry, reporting, and record keeping requirements . . . for any person who discharges pollutants . . . to navigable waters." The attached Monitoring and Reporting Program is pursuant to California Water Code Sections 13267 and 13383.
16. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and SWRCB Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on water quality will be insignificant.
17. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations),

- 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
18. Federal regulations for storm water discharges were promulgated by USEPA on 16 November 1990 (40 CFR Parts 122, 123, and 124) which require specific categories of industrial facilities, which discharge storm water, to obtain NPDES permits and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate industrial storm water pollution.
  19. The SWRCB adopted Order No. 97-03-DWQ (General Permit No. CAS000001), on 17 April 1997, specifying waste discharge requirements for discharge of storm water associated with industrial activities, excluding construction activities, and requiring submittal of a Notice of Intent (NOI) by industries to be covered under the permit. All stormwater drainage at the site is internal, and therefore no stormwater notice of intent is required for the Discharger.
  20. The Discharger developed a pretreatment program in conformance with 40 CFR Part 403, which was approved on 8 December 2000.
  21. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs this raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.
  22. Sanitary sewer overflows consist of varying mixtures of domestic sewage, industrial wastewater, and commercial wastewater. This mixture depends on the pattern of land use in the sewage collection system tributary to the overflow. The chief causes of sanitary sewer overflows include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.
  23. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause temporary exceedances of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.
  24. The Discharger is expected to take all necessary steps to adequately maintain and operate its sanitary sewer collection system. This Order requires the Discharger to prepare and implement a Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan.

25. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), requiring preparation of an environmental impact report or negative declaration in accordance with Section 13389 of the California Water Code.
26. The Regional Board has considered the information in the attached Fact Sheet in developing the Findings of this Order. The Fact Sheet, Monitoring and Reporting Program No. R5-2005-0010, and Attachments A and B are a part of this Order.
27. The discharge is presently governed by Waste Discharge Requirements Order No. 99-065, adopted by the Regional Board on 11 June 1999.
28. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
29. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
30. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided USEPA has no objections.

IT IS HEREBY ORDERED that Order No. 99-065 is rescinded and the Sewerage Commission-Oroville Region, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

**A. Discharge Prohibitions**

1. Discharge of treated wastewater at a location or in a manner different from that described in Finding Nos. 2 and 3 is prohibited.
2. Discharge of storm water is prohibited without first obtaining coverage under the general Permit for Discharges of Storm Water Associated with Industrial Activities.
3. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13. See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)."
4. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.



## B. Effluent Limitations

1. Effluent shall not exceed the following limits at Discharge 001:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Monthly Median</u>	<u>4-day Average</u>	<u>Daily Maximum</u>
BOD <sup>a</sup>	mg/L	20	25	--	--	40
	lbs/day <sup>b</sup>	1,100	1,400	--	--	2,200
Total Suspended Solids	mg/L	20	25	--	--	40
	lbs/day <sup>b</sup>	1,100	1,400	--	--	2,200
Chlorine Residual	mg/L	--	--	--	0.01	0.02 <sup>c</sup>
Total Recoverable Copper	ug/L	57	--	--	--	110
	lbs/day <sup>b</sup>	3.1	--	--	--	6.0
Total Recoverable Zinc	ug/L	280	--	--	--	560
	lbs/day <sup>b</sup>	15	--	--	--	30
Tetrachloroethene	ug/L	14	--	--	--	28
	lbs/day <sup>b</sup>	0.76	--	--	--	1.5
Total Coliform Organisms	MPN/ 100 mL	--	--	23	--	500

<sup>a</sup> 5-day, 20°C Biochemical Oxygen Demand (BOD).

<sup>b</sup> Based upon a design treatment capacity of 6.5 mgd.

<sup>c</sup> 1-hour average

2. The arithmetic mean of 20°C BOD (5-day) and total suspended solids in effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).
3. The discharge shall not have a pH less than 6.0 nor greater than 9.0.
4. The average dry weather (July through September) discharge flow shall not exceed 6.5 mgd.
5. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay -----70%

Median for any three or more consecutive bioassays -----90%

**C. Sludge Disposal**

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.
2. Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.
3. Use and disposal of sewage sludge shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503. If the State Water Resources Control Board and the Regional Water Quality Control Boards are given the authority to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR 503 whether or not they have been incorporated into this Order.
4. The Discharger shall submit a sludge disposal plan describing the annual volume of sludge generated by the plant and specifying the disposal practices in accordance with the attached Monitoring and Reporting Program.

**D. Receiving Water Limitations**

Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit.

The discharge shall not cause the following in the Feather River:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/L during the period of 1 June through 31 August nor below 8.0 mg/L during the period of 1 September through 31 May.
2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
4. Chlorine to be detected in the receiving water in concentrations equal to or greater than 0.01 mg/L.
5. Aesthetically undesirable discoloration.

6. Fungi, slimes, or other objectionable growths.
7. The turbidity to increase as follows:
  - a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
  - b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
  - c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
  - d. More than 10 percent where natural turbidity is greater than 100 NTUs.
8. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.
9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. The normal ambient temperature to be increased more than 5°F, or to higher than 56°F when such an increase will be detrimental to the fishery, whichever is more restrictive.
11. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
12. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
13. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
14. Violations of any applicable water quality standard for receiving waters adopted by the Regional Board or the SWRCB pursuant to the CWA and regulations adopted thereunder.
15. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
16. The fecal coliform concentration in any 30-day period to exceed a geometric mean of 200 MPN/100 ml or cause more than 10 percent of total samples to exceed 400 MPN/100 ml.

17. Electrical Conductivity (at 25 °C) to exceed 150 umhos/cm (90 percentile) in well mixed waters.
18. Upon adoption of any applicable water quality standard for receiving waters by the Regional Board or the SWRCB pursuant to the CWA and regulations adopted thereunder, this permit may be reopened and receiving water limitations added.

**E. Groundwater Limitations**

1. The discharge, in combination with other sources, shall not cause groundwater underlying the wastewater disposal areas to contain waste constituents statistically greater than background water quality, except for coliform bacteria. For coliform bacteria, increases shall not cause the most probable number of total coliform organisms to exceed 2.2 MPN/100 ml over any seven-day period.

**F. Pretreatment Program Requirements**

The Discharger shall:

1. Comply with all pretreatment requirements contained in 40 CFR Part 403 and shall be subject to enforcement actions, penalties, fines, and other remedies by USEPA or other appropriate parties, as provided in the CWA, as amended. The Discharger shall implement and enforce its approved Pretreatment Program. The USEPA may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the CWA.
2. Enforce the requirements promulgated under Section 307(b), (c), and (d), and Section 402(b) of the CWA. The Discharger shall cause industrial users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements, or in the case of a new industrial user, upon commencement of the discharge.
3. Perform the pretreatment functions required in 40 CFR Part 403, including, but not limited to:
  - a. Implementing the necessary legal authorities as provided in 40 CFR 403.8(f)(1);
  - b. Enforcing the pretreatment requirements under 40 CFR 403.5 and 403.6;
  - c. Implementing the programmatic functions as provided in 40 CFR 403.8(f)(2);
  - d. Providing the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and

- e. Publishing a list of significant violators as required by 40 CFR 403.8(f)(2)(vii), where "significant violations" and "significant noncompliance" are as defined by USEPA in Pretreatment Compliance Monitoring and Enforcement Guidance, pp. 3-48 through 3-52.

#### **G. Provisions**

1. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, ground water, cooling waters, and condensates that are essentially free of pollutants.
2. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
3. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.
4. **Within one year of the adoption date of this order** the Discharger shall submit to the Regional Board a Sewer System Operation, Maintenance, Overflow Prevention, and Overflow Response Plan (SS Plan) that describes the actions designed to prevent or minimize the potential for sanitary sewer overflows. The Discharger shall amend the SS Plan as necessary. The Discharger shall ensure that the up-to-date SS Plan is readily available to maintenance personnel at all times and that personnel are familiar with the plan.

At a minimum, the Operation and Maintenance portion of the SS Plan shall contain or describe the following:

- a. Plans of the sewer system, identifying sewer mains, manholes, cleanouts, any air relief valves, and any other specific critical equipment or infrastructure;
  - b. A listing of equipment and elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;
  - c. A schedule for routine inspection and testing of manholes, sewer system piping, valves, and other key system components, and rehabilitation procedures to be followed in the case that such rehabilitation is necessary;
5. At a minimum, the Overflow Prevention and Response portion of the SS Plan shall contain or describe the following:

- a. Response procedures for sanitary sewer overflows. Procedures shall minimize the volume of sewage that may enter surface waters, and minimize the adverse effects of sewer overflows on water quality and public health. Procedures shall also ensure that all overflows are properly identified, responded to and reported; and
  - b. A plan to notify the Butte County Environmental Health Department and a public notification plan, in which any posting of areas contaminated with sewage is performed at the direction of the Butte County Environmental Health Department. All parties with a reasonable potential for exposure to an overflow event shall be notified. Any spill in excess of 1,000 (one thousand) gallons to a surface water must also be immediately reported to the State of California Office of Emergency Services. Failure to report such a spill in accordance with the above laws and regulations is a misdemeanor punishable by fine and imprisonment.
6. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the SWRCB, this Order may be reopened and a limitation based on that objective included.
7. The Discharger shall use the best practicable cost-effective control technique currently available to limit mineralization to no more than a reasonable increment.
8. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)," dated February 2004, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions."
9. The Discharger shall comply with Monitoring and Reporting Program No. R5-2005-0010, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.

When requested, the Discharger shall complete and submit Discharge Monitoring Reports to USEPA. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

10. This Order expires on **1 January 2010** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than **180 days** in advance of such

date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

11. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from, the SWRCB (Division of Water Rights).
12. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 27 January 2005.

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THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0010

NPDES NO. CA0079235

FOR  
SEWERAGE COMMISSION-OROVILLE REGION  
WASTEWATER TREATMENT PLANT  
BUTTE COUNTY

This Monitoring and Reporting Program is issued pursuant to California Water Code Sections 13383 and 13267. The Discharger shall not implement any changes to this Monitoring and Reporting Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program.

**INFLUENT MONITORING**

Samples shall be collected at approximately the same time as effluent samples and should be representative of the influent. Influent monitoring shall include at least the following:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Daily Flow	mgd	Continuous	Daily
20°C BOD <sub>5</sub>	mg/L, lbs/day	24-hour Composite	Weekly
Suspended Solids	mg/L, lbs/day	24-hour Composite	Weekly
Temperature	°F	Grab	Weekly

A 24-hour composite influent sample shall be collected annually and analyzed for total cadmium, chromium, copper, lead, nickel, silver, and zinc. The influent sample shall be collected at the same time an effluent sample is obtained for analysis of priority pollutants.

**EFFLUENT MONITORING**

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Effluent samples should be representative of the volume and quality of the discharge. Samples collected from the outlet structure of ponds will be considered adequately composited. Time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:



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<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Daily Flow	mgd	Continuous	Daily
Chlorine Residual	mg/L	Continuous	Continuous <sup>a</sup>
Sulfur Dioxide Residual	mg/L	Continuous	See note b
pH <sup>b</sup>	pH units	Grab	Daily
20°C BOD <sub>5</sub>	mg/L, lbs/day	24-hour Composite	Weekly
Suspended Solids	mg/L, lbs/day	24-hour Composite	Weekly
Total Coliform Organisms	MPN/100 ml	Grab	Weekly
Temperature <sup>c</sup>	°F	Grab	Weekly
Ammonia <sup>c,d</sup>	mg/L	Grab	Quarterly
Total Copper	ug/L	Grab	Monthly
Total Lead	ug/L	Grab	Quarterly <sup>e</sup>
Total Silver	ug/L	Grab	Quarterly <sup>e</sup>
Total Zinc	ug/L	Grab	Monthly
Tetrachloroethene	ug/L	Grab	Monthly
Electrical Conductivity @ 25°C	umhos/cm	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Quarterly
Priority Pollutants <sup>f</sup>	ug/L	Grab	Annually
Acute Toxicity <sup>g</sup>	% Survival	Grab	Quarterly

<sup>a</sup> Report peak 1-hour average for each day and peak 4-day average for the month.

<sup>b</sup> Report sulfur dioxide concentration only during periods when chlorine chart indicates positive chlorine residual that is not the result of maintenance or calibration of the chlorine analyzer.

<sup>c</sup> Concurrent with biotoxicity monitoring.

<sup>d</sup> Report as both total and un-ionized ammonia.

<sup>e</sup> This testing can be ceased following the reporting of the first four quarterly sample results after adoption of the permit, provided all samples are below the CTR Criteria.

<sup>f</sup> Samples shall be analyzed for the toxic priority pollutants identified by the California Toxics Rule at 40 CFR 131.38. Effluent samples shall be collected simultaneously with receiving water samples to be analyzed for the CTR pollutants. Monitoring shall be conducted in accordance with procedures described under section "Priority Pollutant Monitoring" below.

<sup>g</sup> Rainbow trout shall be used as the test species.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

### RECEIVING WATER MONITORING

All receiving water samples shall be grab samples taken from the Feather River. Receiving water monitoring shall include at least the following:

<u>Station</u>	<u>Description</u>
R-1	500 feet upstream from the point of discharge
R-2	One quarter mile downstream from the point of discharge

<u>Constituent</u>	<u>Unit</u>	<u>Station</u>	<u>Sampling Frequency</u>
pH	pH units	R-1, R-2	Monthly
Turbidity	NTU	R-1, R-2	Monthly
Dissolved Oxygen	mg/L	R-1, R-2	Monthly
Temperature	°F (or °C)	R-1, R-2	Monthly
Total Dissolved Solids <sup>a</sup>	mg/L	R-1, R-2	Quarterly
Electrical Conductivity @ 25°C <sup>a</sup>	umhos/cm	R-1, R-2	Monthly
Total Copper <sup>a, b</sup>	ug/L	R-1, R-2	Monthly
Total Zinc <sup>a, b</sup>	ug/L	R-1, R-2	Monthly
Priority Pollutants <sup>b</sup>	ug/L	R-1	Annually

<sup>a</sup> Samples shall be taken at the same time effluent samples are taken for these constituents

<sup>b</sup> Samples shall be analyzed for the toxic priority pollutants identified by the California Toxics Rule at 40 CFR 131.38. Effluent samples shall be collected simultaneously with receiving water samples to be analyzed for the CTR pollutants. Monitoring shall be conducted in accordance with procedures described "Priority Pollutant Monitoring" below. Receiving water hardness and pH shall be determined at R-1 at the same time.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2. Attention shall be given to the presence or absence of:

- |                                 |  |
|---------------------------------|--|
| a. Floating or suspended matter | e. Visible films, sheens or coatings       |
| b. Discoloration                | f. Fungi, slimes, or objectionable growths |
| c. Bottom deposits              | g. Potential nuisance conditions           |
| d. Aquatic life                 |  |

Notes on receiving water conditions shall be summarized in the monitoring report.

### THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity screening shall be conducted annually to determine whether the effluent is contributing toxicity to the Feather River. The screening shall be conducted as specified in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms*, EPA 600/4-91-002, or latest edition. Chronic toxicity samples shall be collected at the discharge of the plant prior to its entering the Feather River. Twenty-four-hour composite samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. The screening test shall be performed on effluent samples diluted 26:1 using Feather River water obtained upstream of the discharge point. Chronic toxicity screening shall include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum

Frequency: Once per year.

If the results of the chronic toxicity screening indicate the waste stream may cause in-stream toxicity, the Discharger will be required to implement an effluent toxicity monitoring program in accordance with the procedures outlined in the document referenced in the above paragraph and *Technical Support Document for Water Quality-Based Toxics Control*, EPA 505/2-90-001. Appropriate deadlines for this program will be established if and when it is determined that a toxicity monitoring program is required.

### SLUDGE MONITORING

A composite sample of sludge shall be collected annually in accordance with USEPA's Publicly Owned Treatment Works (POTW) Sludge Sampling and Analysis Guidance Document, August 1989 (or most recent edition), and tested for priority pollutants.

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

Annually by **30 January**, the Discharger shall submit characterization of sludge quality, including sludge percent solids and quantitative results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). All sludge samples shall be a composite of a minimum of twelve (12) discrete samples taken at equal time intervals over 24 hours. Suggested methods for analysis of sludge are provided in USEPA publications titled *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* and *Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*. Recommended analytical holding times for sludge samples should reflect those specified in

40 CFR 136.6.3(e). Other guidance is available in USEPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989.

### **PRIORITY POLLUTANT MONITORING**

The State Implementation Policy (SIP) requires periodic testing for the toxic priority pollutants established by the CTR at 40 CFR 131.38. Prior to expiration of this Order, the Discharger shall conduct one sampling event and analysis for the CTR pollutants in receiving water and effluent. The Discharger is not required to perform asbestos monitoring. Receiving water samples shall be collected simultaneously and analyzed for the CTR pollutants plus pH and hardness. All analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each of the analytes. Laboratory methods and limits shall be as described in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2000), unless a variance has been approved by the Executive Officer. If, after a review of the monitoring results, it is determined that the discharge causes, has the reasonable potential to cause, or contributes to in-stream excursions above water quality objectives, this Order will be reopened and limitations based on those objectives will be included. Additionally, if pollutants are detected, but insufficient information exists to establish an effluent limit or determine if an effluent limit is necessary, then additional monitoring will be required to provide sufficient information.

All organic analyses shall be by Gas Chromatography/Mass Spectrometry (GCMS), Method 8260B for volatiles and Method 8270C for semi-volatiles. Pesticides shall be analyzed by Method 8081A. Dioxins shall be analyzed by Method 1613/8290. If organic analyses are run by Gas Chromatography (GC) methods, any detectable concentrations are to be confirmed by GCMS. Inorganics shall be analyzed by the following Methods.

Analysis for the dioxin congeners shall be performed as described in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* using High Resolution Mass Spectrometry.

Metals shall be analyzed by the USEPA methods listed below. Alternative analytical procedures may be used with approval by the Regional Board if the alternative method has the same or better detection level than the method listed.

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Method Description	USEPA Method	Constituents
Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)	1638	Antimony, Beryllium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Thallium, Total Chromium, Zinc
Cold Vapor Atomic Absorption (CVAA)	1631	Mercury
Gaseous Hydride Atomic Absorption (HYDRIDE)	206.3	Arsenic
Flame Atomic Absorption (FAA)	218.4	Chromium VI
Colorimetric	335./ 2 or 3	Cyanide

The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the USEPA MDL determined by the procedure found in 40 CFR Part 136. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

- Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory.
- Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
- For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration." Numerical estimates of data quality may be by percent accuracy (+ or – a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

#### **PRETREATMENT PROGRAM MONITORING**

The Discharger shall submit an annual report to the Regional Board, with copies to the USEPA Regional Administrator and the SWRCB, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, the Discharger shall include the reasons for the noncompliance and state how and when the Discharger shall comply with such conditions and requirements. This annual report shall be submitted by **28 February** and shall contain, but not

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be limited to, items G.1 through 10 of Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES) dated 1 March 1991.

In addition to the information required in the annual report, the Discharger shall report quarterly the information contained in G.4. (a through g) of Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES) dated 1 March 1991. The reports shall also describe progress towards compliance with audit or pretreatment compliance inspection requirements. Reports shall be submitted within **30 days of the end of each quarter**; however, information required in the fourth quarterly report may be included as part of the annual report. If none of the aforementioned conditions exist, at a minimum, a letter certifying that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted.

In addition to the Regional Board, signed copies of the reports shall be submitted to the Regional Administrator and the SWRCB at the following addresses:

Mr. Keith Silva  
U.S. Environmental Protection Agency  
Region IX, Attn: W-5-2  
75 Hawthorne Street  
San Francisco, CA 94105

Pretreatment Program Manager  
Regulatory Section  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 944213  
Sacramento, CA 94244-2130

## REPORTING

Monitoring results shall be submitted to the Regional Board by the **first day of the second month** following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month** following each calendar quarter and year, respectively. California Toxics Rule/SIP monitoring shall be submitted as soon as individual results are available, with all results submitted by the date stated above.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Suspended Solids, should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

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By **30 January of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names, certificate grades, and general responsibilities of all persons employed at the WWTF (Standard Provision A.5).
- b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
- c. A statement certifying when the flow meter and other monitoring instruments and devices used for demonstration of compliance with this order were last calibrated, including identification of who performed the calibration (Standard Provision C.6).
- d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: \_\_\_\_\_  
THOMAS R. PINKOS, Executive Officer

\_\_\_\_\_  
27 January 2005  
(Date)

## INFORMATION SHEET

ORDER NO. R5-2005-0010  
NPDES NO. CA0079235  
SEWERAGE COMMISSION-OROVILLE REGION  
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### GENERAL INFORMATION

The Sewerage Commission-Oroville Region operates a wastewater treatment plant in Section 25, T19N, R4E, MDB&M. The treatment plant presently treats an average dry weather flow of 3.2 mgd. Treated effluent is discharged to the Feather River in Section 19, T19N, R4E, MDB&M (Discharge 001).

Liquid treatment processes at the plant include raw sewage screening for removal of large solids, grit removal, primary clarification, activated sludge treatment with secondary clarification, filtration, and chlorination/dechlorination. Sludge is treated using aerobic digestion for primary and secondary sludge and lagoon dewatering of secondary sludge. Dried sludge is taken to a Class III landfill for disposal.

### TYPE AND QUANTITY OF WASTE DISCHARGED

The discharger treats an average dry weather flow of approximately 3.2 mgd of municipal wastewater. The waste is treated by biological treatment. The report of waste discharge and reports submitted by the Discharger describe the discharge as follows:

Design Average Dry Weather Flow: 6.5 mgd  
Average Daily Dry Weather Flow: 3.2 mgd  
Peak Day Wet Weather Flow: 8.9 mgd  
Average Temperature: 76°F Summer; 65°F Winter

<u>Constituent</u>	<u>mg/L</u>	<u>lbs/day<sup>b</sup></u>
BOD <sub>5</sub> <sup>a</sup>	3.1	83
Total Suspended Solids	1.2	32

<sup>a</sup>5-day, 20°C biochemical oxygen demand

<sup>b</sup>Based on a current average dry weather flow of 3.2 mgd

### REASONABLE POTENTIAL ANALYSIS

Federal regulations contained at 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. USEPA adopted the National Toxics Rule (NTR) on 22 December 1992, which was amended on 4 May 1995, and 9 November 1999, and the California Toxics Rule (CTR) on 18 May 2000. The NTR and CTR contain water quality standards applicable to this discharge. The State Water



Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP), which contains guidance on implementation for the NTR and CTR.

The Discharger completed sampling required by the SIP and has submitted the results of this sampling. A determination was made that there is reasonable potential to cause or contribute to an in-stream excursion above the water quality standards for copper, zinc, and tetrachloroethene. Development of effluent limits for these constituents are presented below. There were a small number of effluent sample results that were discarded as not being representative of the effluent or receiving water. These were as follows: silver detected at 2.2 ug/L in the effluent and at 1 ug/L in the receiving water, all other effluent sample results were below CTR criteria and receiving water sample results were non detect or below reporting limits; lead was detected in initial effluent samples, but it was determined that clean sampling techniques were not employed, subsequent sample results were below CTR criteria; bis(2-Ethylhexyl)phthalate detected, but not quantified at 7 ug/L, all other sample results were non-detect; Lindane detected at 0.02 ug/L, all other samples at non-detect; Chlordane detected, but not quantified at 0.009 ug/L, all other samples were non-detect; Dieldrin at 0.01 ug/L, all other samples were non-detect; and Heptachlor Epoxide detected, but not quantified at 0.048, all other samples were at non-detect. This order includes quarterly monitoring for silver and lead in the first year of the permit cycle to determine if there is a reasonable potential to cause or contribute to an in-stream excursion above the water quality standard.

## **BASIS FOR PERMIT CONDITIONS**

### **Metals Translators**

Water quality criteria and objectives for metals in the CTR and Basin Plan are presented as dissolved concentrations. Lacking site-specific data, the USEPA recommends conversion factors (translators) to translate dissolved concentrations to total concentrations. The conversion factor for copper in freshwater is 0.960 for both the acute and the chronic criteria. The conversion factors for zinc in freshwater are 0.978 for the acute and 0.986 for the chronic criteria.

### **Mixing Zone Study and Dilution Credit**

The Discharger's consultant conducted a mixing zone study using the CORMIX GI version 4.1 Hydrodynamic Mixing Zone Model to mathematically model effluent discharges from the wastewater treatment plant to the Feather River. The mixing zone modeling results indicated the discharge meets the definition of a completely mixed discharge as contained in the SIP. On the basis of the mixing zone study the Discharger requested a dilution credit of 92 for acute criteria and 121 for chronic criteria.

SWRCB Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, requires the Regional Board to maintain high quality waters of the state

unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies. The dilution credits requested by the Discharger would result in effluent limits that are extremely high in comparison with measured levels in the Discharger's effluent. Using these dilution credits would grant 100 percent of the assimilative capacity of the river to this discharge, eliminating the ability to allow existing or potential downstream discharges without water quality objectives being exceeded. The Regional Board, therefore, is granting a portion of the requested dilution credit in an effort to maintain the quality of the Feather River at the current levels and reserve a portion of the river's assimilative capacity for other discharges. A dilution credit of 20:1 for acute and human health criteria and 26:1 for chronic criteria will result in effluent limits that more reasonably represent current levels in the Discharger's effluent and thus are used to develop effluent limits for copper, zinc and tetrachloroethene in this order.

### **Effluent Limitations**

#### **Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) Limits:**

Federal regulations, 40 CFR, part 133, provide technology based effluent limitation for BOD and TSS. Pursuant to the regulations at 40 CFR Sections 133.102(a), and (b), the BOD and TSS 30 day average discharge limit for secondary treatment systems shall not exceed 30 mg/L, the 7 day average shall not exceed 45 mg/L, and the 30 day BOD percent removal shall not be less than 85 percent.

The previous permit called for monthly average effluent limits for BOD and TSS of 20 mg/L, weekly average limits of 25 mg/L, daily maximum limit of 40 mg/L, and a monthly average removal rate of 85 percent. These limits remain the same in this permit. The discharger has had success meeting these limits.

#### **Chlorine Residual:**

The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Chlorine is used for disinfection of the effluent waste stream. Chlorine can cause toxicity to aquatic organisms when discharged to surface waters. USEPA recommends, in their *Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life*, that chlorine concentrations not exceed 0.02 mg/L as a 1-hour average and 0.01 mg/L as a 4-day average. The use of chlorine as a disinfectant in the wastewater treatment process presents a reasonable potential that it could be discharged in toxic concentrations. An effluent limitation for chlorine has been included in the Order to protect the receiving stream aquatic life beneficial uses. The effluent limitation has been established at the USEPA recommended ambient water quality criteria for chlorine. The one-hour average limitation, rather than an instantaneous or daily maximum, will be applied for compliance determinations. A one-hour average limitation allows for continuous monitoring anomalies while protecting aquatic organisms against toxicity.

The Discharger has installed additional monitoring and control systems to help prevent violations of the effluent chlorine limit. These systems include the following: monitoring of the sulfur dioxide concentration in the final effluent after dechlorination; a system of maintenance that keeps the chlorine analyzer calibrated and increases the reliability of that instrument; and a control system that will automatically shut down the effluent pumps that is activated if the detected level of sulfur dioxide falls below 0.1 mg/L or a measured chlorine residual exceeds 0.02 mg/L. The additional monitoring of sulfur dioxide will provide confirmation that no chlorine is being discharged during periods of calibration, maintenance, repair or malfunction of the chlorine residual analyzer.

**Total Coliform Organisms:**

This Order requires a monthly median total coliform limit of 23 MPN/100 mL and a daily maximum limit of 500 MPN/100 mL for effluent discharged to the Feather River. This level is thought to be adequately protective of beneficial uses and is consistent with the previous permit.

**pH:**

The Basin Plan provides that the pH of surface waters shall not be depressed below 6.5 nor raised above 8.5 nor shall the discharge alter pH of the receiving water more than 0.5 units. Federal regulations at 40 CFR 133.102(c) describes the minimum level of effluent quality to be attained by secondary treatment facilities for pH to be within 6.0 and 9.0 units. This Order requires the pH of the effluent to be maintained within the limits of 6.0 and 9.0 pH units.

**Flow Limits:**

The monthly average daily dry weather flow limit of 6.5 mgd is based on the design capacity of the treatment facility.

**Copper:**

Based on analytical results of effluent samples collected by the Discharger and the procedures presented in the SIP, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for copper; therefore, effluent limitations for copper are included in the Order. Effluent results submitted by the Discharger are summarized in Table IS-1.

**Table IS-1 – Total Copper Concentrations (ug/L)**

Date	WPCP Effluent	Feather River	River Hardness
7/11/01	0.7 DNQ	1.3 <sup>b</sup>	43
12/10/01	12	2.8 <sup>b</sup>	52
1/23/02	15	10 <sup>b</sup>	44
3/11/02	6.3	19 <sup>b</sup>	45
7/16/02	7.2	0.8 DNQ <sup>b</sup>	40
1/28/03	9	2.8 <sup>b</sup>	41
12/8/03	6.8	ND, MDL = 0.5	--
3/8/04	--	0.72	--
Average	8.1	0.61	44
Minimum	0.7	0.5	40
Maximum	15	0.72	52
Coefficient of Variation <sup>a</sup>	0.6	--	--

<sup>a</sup> Default C<sub>v</sub> in SIP for number of samples less than 10 is 0.6

<sup>b</sup> Sampling and analysis not performed with “clean” techniques. Values suspect.

As noted, the initial samples were taken and analyzed without using clean sampling techniques. The Discharger was asked to conduct additional sampling using techniques to achieve low level results. The results of this sampling are shown in Table IS-1.

Copper toxicity is hardness dependent. For a hardness of 40 mg/L, the CTR criteria for copper are presented in Table IS-2.

**Table IS-2 – Receiving Water Criteria/Objectives for Copper**

Basis	Dissolved (ug/L)	Total Recoverable (ug/L)
CTR <sub>CCC</sub>	4.09	4.26
CTR <sub>CMC</sub>	5.67	5.91

Criteria are for river hardness = 40 mg/L

The CTR Criteria for copper were not exceeded in the Feather River samples analyzed over the period from July 2001 to March 2004 (as indicated by subsequent discharger sampling). Following are the steps, as presented in section 1.4.B of the SIP, to calculate the effluent limits for copper for Discharge 001:

Step 1: Applicable water quality criteria (C)

CTR criteria are a function of receiving water hardness and are given by the following equation for criterion continuous concentration (CCC) and criterion maximum concentration (CMC):

$$\text{CCC (chronic)} = e^{(0.8545 \cdot \ln(\text{hardness}) - 1.702)} * (0.960) \text{ as dissolved fraction}$$

$$\text{CMC (acute)} = e^{(0.9422 \cdot \ln(\text{hardness}) - 1.7)} * (0.960) \text{ as dissolved fraction}$$

The minimum hardness of 40 mg/L gives the following dissolved criteria:

$$\text{CCC} = 4.09 \text{ ug/L}$$

$$\text{CMC} = 5.67 \text{ ug/L}$$

Applying the translator of 0.960 for chronic and acute:

$$\text{CCC} = 4.26 \text{ ug/L}$$

$$\text{CMC} = 5.9 \text{ ug/L}$$

Step 2: Calculate the ECA

$$\text{ECA} = \text{Effluent Concentration Allowance} = C + D * (C - B)$$

Where D = dilution credit and B = background

$$D_{\text{CCC}} = 26, D_{\text{CMC}} = 20$$

$$\text{ECA}_{\text{CCC}} = 4.26 + 26 * (4.26 - 0.5) = 102 \text{ ug/L}$$

$$\text{ECA}_{\text{CMC}} = 5.9 + 20 * (5.9 - 0.5) = 114 \text{ ug/L}$$

Step 3: Determine long-term average (LTA)

$$C_V = 0.6; \text{ECA multiplier}_{\text{chronic99}} = 0.527$$

$$\text{ECA multiplier}_{\text{acute99}} = 0.321$$

$$\text{LTA}_{\text{CCC}} = 102 * 0.527 = 53.8 \text{ ug/L}$$

$$\text{LTA}_{\text{CMC}} = 114 * 0.321 = 36.6 \text{ ug/L}$$

Step 4: Select lowest LTA

$$LTA_{CMC} = 36.6 \text{ ug/L}$$

Step 5: Calculate water quality based effluent limits

$$C_V = 0.6; \text{AMEL multiplier}_{95} = 1.55 \text{ (n=4 for less than 4 samples per month)}$$

$$MDEL \text{ multiplier}_{99} = 3.11$$

$$\text{Average Monthly Effluent Limit} = 36.6 * 1.55 = 57 \text{ ug/L}$$

$$\text{Maximum Daily Effluent Limit} = 36.6 * 3.11 = 110 \text{ ug/L}$$

### Zinc:

Based on analytical results of effluent samples collected by the Discharger and the procedures presented in the SIP, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for zinc; therefore, effluent limitations for zinc are included in the Order. Effluent results submitted by the Discharger are summarized in Table IS-3.

**Table IS-3 – Total Zinc Concentrations (ug/L)**

Date	WWTP Effluent	Feather River	River Hardness
7/11/01	52	14	43
12/10/01	28	24	52
1/23/02	60	30	44
3/11/02	50	20	45
7/16/02	40	1.0 DNQ	40
1/28/03	60	30	41
Average	48	19.8	44
Minimum	28	1.0	40
Maximum	60	30	52
Coefficient of Variation <sup>a</sup>	0.6	--	--

<sup>a</sup>Default  $C_V$  in SIP for number of samples less than 10 is 0.6

Zinc toxicity is hardness dependent. For a hardness of 40 mg/L (from DWR data), the CTR for zinc are presented in Table IS-4.

**Table IS-4 – Receiving Water Criteria/Objectives for Zinc**

Basis	Dissolved (ug/L)	Total Recoverable (ug/L)
CTR <sub>CCC</sub>	54.4	55.1
CTR <sub>CMC</sub>	53.9	55.1

Criteria are for river hardness = 40 mg/L

The CTR Criteria and Basin Plan objective for zinc were not exceeded in the Feather River samples analyzed over the period from July 2001 to October 2002. Following are the steps, as presented in section 1.4.B of the SIP, to calculate the effluent limits for zinc at Discharge 001:

Step 1: Applicable water quality criteria (C)

CTR criteria are a function of receiving water hardness and are given by the following equation for criterion continuous concentration (CCC) and criterion maximum concentration (CMC):

$$\text{CCC (chronic)} = e^{(0.8473 \cdot \ln(\text{hardness}) + 0.884)} * (0.986) \text{ as dissolved fraction}$$

$$\text{CMC (acute)} = e^{(0.8473 \cdot \ln(\text{hardness}) + 0.884)} * (0.978) \text{ as dissolved fraction}$$

Using the minimum hardness of 40 mg/L gives the following dissolved criteria:

$$\text{CCC} = 54.4 \text{ ug/L}$$

$$\text{CMC} = 53.9 \text{ ug/L}$$

Applying the translator of 0.986 for chronic and 0.978 for acute:

$$\text{CCC} = 55.1 \text{ ug/L}$$

$$\text{CMC} = 55.1 \text{ ug/L}$$

Step 2: Calculate the ECA

$$ECA = \text{Effluent Concentration Allowance} = C + D * (C-B)$$

Where D = dilution credit and B = background

$$D_{CCC} = 26, D_{CMC} = 20$$

$$ECA_{CCC} = 55.1 + 26 * (55.1-30) = 708 \text{ ug/L}$$

$$ECA_{CMC} = 55.1 + 20 * (55.1-30) = 557 \text{ ug/L}$$

Step 3: Determine long-term average (LTA)

$$C_V = 0.6; \text{ECA multiplier}_{\text{chronic99}} = 0.527$$

$$\text{ECA multiplier}_{\text{acute99}} = 0.321$$

$$LTA_{CCC} = 708 * 0.527 = 373 \text{ ug/L}$$

$$LTA_{CMC} = 557 * 0.321 = 179 \text{ ug/L}$$

Step 4: Select lowest LTA

$$LTA_{CMC} = 179 \text{ ug/L}$$

Step 5: Calculate water quality based effluent limits

$$C_V = 0.6; \text{AMEL multiplier}_{95} = 1.55 \text{ (n=4 for less than 4 samples per month)}$$

$$\text{MDEL multiplier}_{99} = 3.11$$

$$\text{Average Monthly Effluent Limit} = 179 * 1.55 = 280 \text{ ug/L}$$

$$\text{Maximum Daily Effluent Limit} = 179 * 3.11 = 560 \text{ ug/L}$$

**Tetrachloroethene:**

Based on analytical results of effluent samples collected by the Discharger and the procedures presented in the SIP, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR human health criterion for tetrachloroethene; therefore, effluent limitations for tetrachloroethene are included in the Order. Effluent results submitted by the Discharger are summarized in Table IS-5. The CTR human health criterion for tetrachloroethene is 0.8 ug/L.



**Table IS-5 – Tetrachloroethene Concentrations (ug/L)**

Date	WPCP Effluent	Feather River
7/23/01	1	ND, MDL = 0.08
10/30/01	0.81	ND, MDL = 0.08
1/28/02	ND, MDL = 0.11	4.6 <sup>b</sup>
4/8/02	ND, MDL = 0.11	0.32 DNQ
7/30/02	ND, MDL = 0.11	ND, MDL = 0.11
10/28/02	0.47	ND, MDL = 0.11
Average	<0.44	0.14
Minimum	0.11	<0.11
Maximum	1.0	0.32
Coefficient of Variation <sup>a</sup>	0.6	--

<sup>a</sup> Default C<sub>v</sub> in SIP for number of samples less than 10 is 0.6

<sup>b</sup> Disregarded as not representative of effluent, average of other sample results = 0.14

The CTR criterion for tetrachloroethene was not exceeded in the Feather River samples analyzed over the period from July 2001 to January 2003. Dilution credits will be allowed as presented in the SIP. Following are the steps, as presented in section 1.4.B of the SIP, to calculate the effluent limits for tetrachloroethene at Discharge 001:

Step 1: Applicable water quality criteria (C)

CTR human health criteria for consumption of water and organisms:

$$C = 0.8 \text{ ug/L}$$

Step 2: Calculate the ECA

$$ECA = \text{Effluent Concentration Allowance} = C + D * (C-B)$$

Where D = dilution credit and B = background

$$D = 20$$

$$ECA = 0.8 + 20 * (0.8 - 0.14) = 14 \text{ ug/L}$$

Step 3: N/A

Step 4: N/A

Step 5: Calculate water quality based effluent limits

$$\text{AMEL} = \text{ECA} = 14$$

$$\text{Average Monthly Effluent Limit} = 14 \text{ ug/L}$$

$$C_V = 0.6; \text{MDEL}_{99}/\text{AMEL}_{95} \text{ multiplier} = 2.01 \text{ (n=4 for less than 4 samples per month)}$$

$$\text{Maximum Daily Effluent Limit} = 14 * 2.01 = 28 \text{ ug/L}$$

**Toxicity Limits:**

The Basin Plan requires that all waters be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This Order contains an acute toxicity effluent limit which states, "Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay -----70%

Median for any three or more consecutive bioassays -----90%"

The monitoring and reporting program requires analysis for pH and temperature to be performed concurrent to each monthly acute toxicity bioassay. This Order also contains annual monitoring for chronic toxicity.

**SLUDGE DISPOSAL**

This Order contains provisions requiring the Discharger to comply with current federal and state laws and regulations for disposal of sewage sludge. The Discharger is required to report any proposed change in sludge use or disposal practice **90 days** in advance of change.

**RECEIVING WATER LIMITATIONS**

The receiving water limitations contained in this Order are based on water quality objectives contained in the Basin Plan for the Feather River.

**PROCEDURES ON REACHING FINAL DECISION ON DRAFT PERMIT**

The tentative waste discharge requirements have been sent to the Discharger and interested parties for review (at least 30 days) prior to formal presentation to the Regional Board. Any contested items on the permit will be heard and considered for change prior to formal adoption at the Board Meeting. For further information or questions regarding the NPDES permit, contact Nolan Randall at the Regional Water Quality Control Board in Redding at (530) 224-4801.

27 January 2005







